

STARFIX.NAV®

Fugro Chance Inc. (Chance) has developed a graphic positioning and navigation system called STARFIX.NAV which incorporates true GIS functionality, real-time positioning, and graphic display in a comprehensive survey, monitoring, and calculation package. It allows for simultaneous tracking of an unlimited number of vessels while integrating valuable information from Chance's data base. The core features of STARFIX.NAV are the intelligent user interface and data display, comprehensive data processing and logging, hardware interfacing capability, and extensive geodetic and survey computations. Real-time positioning and true GIS functionality are just some of the advantages of using STARFIX.NAV.

Data Display:

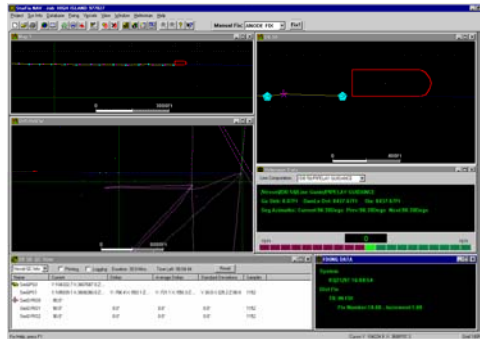
A graphic display of the physical survey is depicted in the various map windows. Map windows integrate real-time display of vessel and anchor positions with the survey site data from the Chance data base. Maps are updated in real time to reflect calculations, user-specified changes, and collected data. The view of each map can be independently configured by the survey operator. STARFIX.NAV uses TERRA-MODEL® Plus 3 Toolpak™ as its graphics engine, with a multi-layered system for managing map objects. An interactive graphic utility enables the creation and modification of a dimensionally accurate vessel outline for each vessel.

Data Access:

True GIS functionality, enabling fast access to reliable data is available with STARFIX.NAV. Map objects can be identified by the visual inspection of color, symbol, or line type. The survey operator may query any map object to obtain detailed information and append this data online. Immediate access in the field to the proprietary information maintained by Chance for 40 years adds unsurpassed accuracy and control to any survey.

Vessel Tracking:

STARFIX.NAV allows simultaneous tracking of an unlimited number of vessels. Once defined, the vessel is displayed on all map windows and positioned by the data from its primary position device. Each vessel can be independently configured by



description, vessel shape outline, survey sensors, offsets, and vessel QC output.

GIS Data Base:

STARFIX.NAV works with Chance's proprietary multi-layered GIS database which is used to identify potential hazards in the Gulf of Mexico.

The Gulf is a maze of platform, wellheads, pipelines, and other obstacles. Accurate site information is essential to successful offshore positioning. Chance sorts through this maze by utilizing its computerized data base to pinpoint these potential hazards. The data base contains vast volumes of geographic information and has been recognized as the most comprehensive data base of wells, pipelines, and hazards to be found in the Gulf. It also contains Continental Shelf lease information, shipwrecks, block boundary polygons and shipping fairways.

This information has proven valuable in assisting clients to plan projects as well as providing information to field crews to avoid delays and assure safe operations. Unique in the industry, this data is continually updated to provide the most current information available. Data sources include the U.S. Department of the Interior's Mineral Management Services, U.S. Coast Guard, and Chance's own data from in-house research and daily field operations.

Offshore Applications:

- Rig moves
- Barge management
- Anchor vessel management
- Template placement
- Pipelay/cablelay

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